

# Appendix

## SOURCE AND RELIABILITY OF THE ESTIMATES

**Source of Data.** The estimates of school enrollment in 1977 are based on data obtained in October of 1977 in the Current Population Survey (CPS) conducted by the Bureau of the Census. The CPS sample was initially selected from the 1970 census file and is updated continuously to reflect new construction where possible. The current sample is spread over 614 areas with coverage in each of the 50 States and the District of Columbia. In the sample, approximately 56,000 occupied households are eligible for interview each month. Of this number, 2,500 occupied units, on the average, are visited but interviews are not obtained because the occupants are not found at home after repeated calls or are unavailable for some other reason. In addition to the 56,000, there are also about 9,500 sample units in an average month which are visited but are found to be vacant or otherwise not to be interviewed. For a description of CPS sample designs prior to 1977, see the detailed report for 1976 in this series.

The estimating procedure used in this survey involved the inflation of the weighted sample results to independent estimates of the total civilian noninstitutional population of the United States by age, race, and sex. These independent estimates are based on statistics from decennial censuses; statistics on births, deaths, immigration and emigration; and statistics on the strength of the Armed Forces.

**Reliability of the Estimates.** Since the estimates in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same questionnaires, instructions and enumerators. There are two types of errors possible in an estimate based on a sample survey - sampling and nonsampling. For estimates in this report indications of the magnitude of sampling error are provided but the extent of nonsampling error is unknown. Consequently, particular care should be exercised in the interpretation of figures based on a relatively small number of cases or on small differences between estimates.

**Sampling variability.** The standard errors presented in table A-1 are primarily measures of sampling variability, that

is, of the variations that occur by chance because a sample rather than the whole of the population was surveyed. As calculated, the standard error also partially measures the effect of certain response and enumeration errors, but it does not measure any systematic biases in the data. The chances are about 68 out of 100 that an estimate from the survey differs from a complete census figure by less than the standard error. The chances are about 90 out of 100 that this difference would be less than 1.6 times the standard error and about 95 out of 100 that the difference would be less than twice the standard error.

All statements of comparison in the text are significant at a 1.6 standard error level or better and most are significant at a level of more than 2.0 standard errors. This means that, for most differences cited in the text, the estimated difference is greater than twice the standard error of the difference. Statements of comparison qualified in some way (e.g., by the use of the phrase, "some evidence") have a level of significance between 1.6 and 2.0 standard errors.

**Note when using small estimates.** Percent distributions are shown in this report only when the base of the percentage is greater than 75,000. Because of the large standard errors involved, there is little chance that percentages would reveal useful information when computed on a smaller base. Estimated number of persons are shown, however, even though the relative standard errors of these numbers are larger than those for the corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs.

**Standard errors for data based on CPS.** Since this is an advance report, standard errors are provided in table A-1 for estimated numbers of persons and estimated percentages for only certain characteristics which are considered the most important among the data in the report.

More detailed standard error tables for each characteristic of interest for estimated numbers of persons or families and estimated percentages are provided in the detailed report for 1976 in this series. A more complete source and reliability statement for the 1977 data will be published with the forthcoming 1977 detailed report.

**Standard errors of estimated numbers and estimated percentages.** Standard errors of estimated numbers and

estimated percentages can be computed directly with formulas (1) and (2) below, respectively. The formulas are:

$$\sigma_x = \sqrt{ax^2 + bx} \quad (1)$$

Here x is the size of the estimate and a and b are the parameters associated with the characteristic.

$$\sigma_{(x,p)} = \sqrt{\frac{b}{x} \cdot p \cdot (100-p)} \quad (2)$$

Here x is the size of the subclass of the population which is the base of the percentage, p is the percentage ( $0 \leq p \leq 100$ ), and b is the parameter associated with the characteristic.

Table A-2 provides the values of the a and b parameters that are used in formulas (1) and (2) to create standard errors of estimated numbers of persons and estimated percentages.

Table A-1. Standard Errors of Estimated Numbers and Estimated Percentages of Persons 3 to 34 Years Old Enrolled in School for the Total, White, and Black Populations: October 1977

(68 chances out of 100. Numbers in thousands)

Enrollment and age	Estimated numbers of persons			Standard errors of estimated numbers of persons		
	Total	White	Black	Total	White	Black
Total enrolled.....	60,013	50,151	8,564	257	252	101
Nursery school.....	1,618	1,314	250	50	45	21
Private.....	1,056	942	78	41	39	12
Kindergarten.....	3,191	2,611	496	65	61	29
Private.....	526	458	50	30	28	9
Elementary school.....	29,234	24,262	4,387	216	202	93
Private.....	3,251	2,950	221	81	77	25
High school.....	15,753	13,152	2,327	169	156	74
Private.....	1,248	1,172	59	51	49	13
College.....	10,217	8,812	1,103	139	130	53
Private.....	2,292	2,069	187	68	65	23
Full time.....	7,196	6,165	803	118	110	46
AGE	Estimated percentages			Standard errors of estimated percentage		
	Total	White	Black	Total	White	Black
3 and 4 years.....	32.0	31.1	35.2	0.8	0.9	2.1
5 and 6 years.....	95.8	95.6	96.5	0.4	0.4	1.0
7 to 9 years.....	99.5	99.5	99.3	0.1	0.1	0.4
10 to 13 years.....	99.4	99.4	99.0	0.1	0.1	0.4
14 and 15 years.....	98.5	98.5	98.8	0.2	0.2	0.5
16 and 17 years.....	88.9	88.5	90.8	0.5	0.5	1.4
18 and 19 years.....	46.2	45.5	48.3	0.8	0.9	2.6
20 and 21 years.....	31.8	31.8	29.5	0.7	0.8	2.4
22 to 24 years.....	16.5	16.3	15.2	0.5	0.5	1.7
25 to 29 years.....	10.8	10.6	11.3	0.3	0.4	1.2
30 to 34 years.....	6.9	6.6	9.0	0.3	0.3	1.2

Table A-2. Parameters to be Used for Each School Enrollment Characteristic for Direct Computation of Standard Errors

Enrollment and race	Parameters	
	a	b
<b>SCHOOL ENROLLMENT</b>		
Total or White.....	-0.000016	2064.3452
Black or other races.....	-0.000186	2791.7805
Kindergarten and nursery school enrollment.....	-0.000126	1738.0412